



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,418	07/07/2003	Edward D. Nowotny	SIVERION-003	7964
26668	7590	07/11/2006	EXAMINER	
RIDOUT & MAYBEE LLP 19TH FLOOR, 150 METCAFFE STREET OTTAWA, ON K2P 1P1 CANADA			SHECHTMAN, SEAN P	
			ART UNIT	PAPER NUMBER
			2125	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,418

Applicant(s)

NOWOTNY ET AL.

Examiner

Sean P. Shechtman

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 25-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-31 are presented for examination. Claims 12, 25-31 have been withdrawn.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-11, 13-24, drawn to selecting a proportion of known good parts based upon a desired yield for products, classified in class 702, subclass 83.
 - II. Claims 12, 25-27, drawn to comparing ones to predetermined limits, classified in class 702, subclass 82.
 - III. Claims 28-31, drawn to modeling sensitivity of a parameter to an operating condition and identifying potential part issues, classified in class 700, subclass 108.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination to selecting a proportion of known good parts based upon a desired yield for products has separate utility increasing the accuracy of a representative sample set in a variable production amount. See MPEP § 806.05(d).

Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination to selecting a proportion of known good parts based upon a desired

yield for products has separate utility increasing the accuracy of a representative sample set in a variable production amount. See MPEP § 806.05(d).

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination of modeling sensitivity of a parameter to an operating condition and identifying potential part issues has separate utility such as adjusting operating conditions in response to potential part issues. See MPEP § 806.05(d).

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Eugene Proulx on June 9, 2006 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-11, 13, 14-24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12, 25-31 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig. 1, element 1001.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1, elements 1000 and 1011; Fig. 2, elements 2017, 2013, 2015; Fig. 5, elements 208, 206, 207. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "1001" has been used to designate both design and a step. The drawings are

Art Unit: 2125

objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1003” has been used to designate both characterization and a step. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1005” has been used to designate both pre-production and a step. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1007” has been used to designate both production and a step. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1009” has been used to designate both delivery and a step. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “1011” has been used to designate both returns and a step. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions,

Art Unit: 2125

wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because the abstract should not refer to purported merits or speculative applications of the invention. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11, 13-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said characterization data for said proportion of known good parts" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "said characterization data for said first set" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "each part parameter" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "each magnitude of variation" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "said first plurality of parts" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "said scaled magnitudes" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "said parameters" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "said magnitude variation step" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the parameter" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the minimum of a parameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said plurality of parts" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "said corresponding parameter values" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the range of values of the corresponding parameter" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the maximum of a parameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said plurality of parts" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said corresponding parameter values" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the range of values of the corresponding parameter" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "all parameter scores" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "said product" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "said characterization data for said proportion of known good parts" in lines 11-12. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "said characterization data for said first set" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "each part parameter" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "each magnitude of variation" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "said first plurality of parts" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "said scaled magnitudes" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "said parameters" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the parameter" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the minimum of a parameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "said plurality of parts" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "said corresponding parameter values" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the range of values of the corresponding parameter" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the maximum of a parameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "said plurality of parts" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "said corresponding parameter values" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the range of values of the corresponding parameter" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "all parameter scores" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-11, 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 3,526,836 to E. Deger et al (hereinafter referred to as Deger) in view of U.S. Pat. No. 4,589,554 to Edelbruck et al (hereinafter referred to as Edelbruck).

Referring to claims 1 and 14, Deger teaches a method and system for determining optimal limits for products, comprising:

providing characterization data in a database for a first plurality of known good parts (Col. 5, lines 47-70; Col. 6, lines 19-37);

a desired yield for said products (Col. 4, lines 21-31; Col.);

a proportion of said known good parts based upon said yield (Col. 4, lines 39-43; Col. 6, line 66 – Col. 7, line 47); and

utilizing a processor to obtain said characterization data and to operate on characterization data for said proportion of known good parts to automatically determine specification limits for said product (Col. 7, lines 49-69; Col. 14, lines 43-69).

Referring to claims 2 and 15, Deger teaches a method in accordance with claim 1, comprising: partitioning said proportion of said known good parts into a first set and as second set; and utilizing said characterization data for said first set to automatically determine said specification limits (Col. 14, lines 50-55).

Referring to claims 3 and 16, Deger teaches a method in accordance with claim 2, comprising utilizing a scoring algorithm as part of said partitioning step (Col. 7, lines 32-38).

Referring to claims 4 and 17, Deger teaches a method in accordance with claim 2, wherein: said partitioning step comprises utilizing an aggregate variability algorithm (Col. 12, lines 18-49).

Referring to claims 5 and 18, Deger teaches a method in accordance with claim 4, wherein: said aggregate variability algorithm comprises; determining a magnitude of variation for each part parameter; dividing each magnitude of variation by a range of parameter values for all of said first plurality of parts to produce a scaled magnitude; and mathematically combining all of said scaled magnitudes for all of said parameters for a part (Col. 6, lines 1-37).

Referring to claims 6 and 19, Deger teaches a method in accordance with claim 5, wherein: said magnitude variation step comprises determining the difference of the parameter minimum or maximum value and a mean of a part means for the parameter for a one-sided limit,

Art Unit: 2125

and determining the greater difference of the parameter minimum and maximum values and a mean of the part means for the parameter for two-sided limits (Col. 3, lines 17-49).

Referring to claims 7 and 20, Deger teaches a method in accordance with claim 2, wherein: said partitioning step comprises a margin from bound algorithm (Col. 12, lines 18-49).

Referring to claims 8 and 21, Deger teaches a method in accordance with claim 7, comprising: calculating the difference between the minimum of a parameter value for a selected one of said plurality of parts and the least value of said corresponding parameter values for all of said plurality of parts, if a lower specification limit is to be determined; and dividing said difference by the range of values of the corresponding parameter over all of said plurality of parts to produce a parameter score (Col. 12, lines 18-49).

Referring to claims 9 and 22, Deger teaches a method in accordance with claim 8, comprising: calculating the difference between the maximum of a parameter value for a selected one of said plurality of parts and the greatest value of said corresponding parameter values for all of said plurality of parts, if an upper specification limit is to be determined; and dividing said difference by the range of values of the corresponding parameter over all of said plurality of parts to produce a parameter score (Col. 12, lines 18-49).

Referring to claims 10 and 23, Deger teaches a method in accordance with claim 9, comprising: calculating the difference between the minimum of a parameter value for a selected one of said plurality of parts and the least value of said corresponding parameter values for all of said plurality of parts; calculating the difference between the maximum of a parameter value for said selected one of said plurality of parts and the greatest value of said corresponding parameter values for all of said plurality of parts; selecting the lesser of the differences of the minimum and

Art Unit: 2125

maximum parameter values if both upper and lower specification limits are to be determined; and dividing said difference by the range of values of the corresponding parameter over all of said plurality of parts to produce a parameter score (Col. 12, lines 18-49).

Referring to claims 11 and 24, Deger teaches a method in accordance with claim 10, comprising: mathematically combining all parameter scores for a part to produce a part score (Col. 9, lines 24-44).

Referring to claim 12, Deger teaches a method in accordance with claim 1, wherein: said product is a semiconductor device (Col. 8, lines 70-75).

Referring to claims 1 and 14, Deger teaches a computer programmed calculate what percentage of final products have to be good to make the manufacturing process a profitable one (Col. 4, lines 21-43). Deger also clearly teaches the computer is programmed to indicate the components responsible for unacceptable performance and thereafter replacing the lot of components determined to be inadequate with another lot of components (Col. 4, lines 21-43; Col. 6, line 66 – Col. 7, line 47).

Referring to claims 1 and 14, Deger teaches all of the limitations set forth above however fails to teach a user input apparatus coupled to said processor to permit a user to select the desired yield and a proportion of the known good parts based upon the yield.

However, referring to claims 1 and 14, Edelbruck teaches analogous art, wherein a user input apparatus coupled to a processor permits a user to select a desired yield and a proportion of known good parts based upon the yield (Col. 19, line 62 – Col. 20, line 31).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to use the user input apparatus of Edelbruck to enter the information taught by Deger, namely, the desired yield for said products and a proportion of said known good parts based upon said yield.

One of ordinary skill in the art would have been motivated to combine these references because Edelbruck teaches the percentage of rejects permits an individual surveillance of each equipment and control unit and allows for an appropriate action to be taken (Col. 19, lines 65 – Col. 20, line 15).

Conclusion

9. The prior art or art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents or publications are cited to further show the state of the art with respect to a “WhatIF” module to view and modify test and parameter specification limits and immediately see the effect of the changes.

U.S. Pat. No. 6,720,194 to Miller et al.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571) 272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

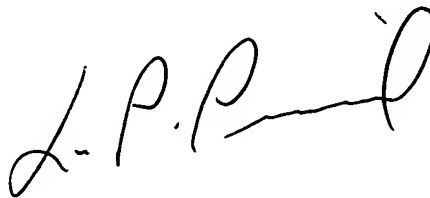
Art Unit: 2125

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS

Sean P. Shechtman

June 26, 2006

A handwritten signature in black ink, appearing to read "L. P. Picard", with a stylized flourish at the end.

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100